



Docket No.: 63134/P026US/10400589  
(PATENT)

In re Application of:  
Thomas R. Spadaro et al.

Confirmation No.: 2497

Application Serial No.: 09/905,014

Art Unit: 2617

Filed: July 13, 2001

Examiner: I. P. Mehra

For: PUBLIC TELEPHONE CONTROL WITH  
VOICE OVER INTERNET PROTOCOL  
TRANSMISSION

### **DECLARATION OF ROBERT L. RAE**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I, Robert L. Rae, being of legal age and capacity, upon personal knowledge, declare as follows:

#### **PERSONAL BACKGROUND**

My name is Robert L. Rae. I am over the age of eighteen and I am a citizen of the United States. I currently reside at 2529 Scenic Drive, Plano, Texas 75025. I am currently an officer of Evercom Systems, Inc. (Evercom), the assignee of the above identified patent application, as the Executive Vice President of Operations and Information Technology. I am also an inventor with respect to numerous patent applications assigned to Evercom.

#### **UNEXPECTEDLY IMPROVED PROPERTIES RESULTING FROM IMPLEMENTATION OF THE CLAIMED INVENTION**

I understand that a number of "secondary considerations," if existing, can indicate non-obviousness. I further understand that such secondary considerations include unexpectedly improved properties. I offer my statements below as evidence of unexpectedly improved properties associated with the combination of a control computer for restricting usage of telephones for calls and a voice over Internet protocol (VoIP) network as claimed in the above identified patent application.

In my efforts to develop improved call processing and control systems for penal institution calling on behalf of Evercom, my initial thoughts were that the features providing call control or usage restriction would be impeded if calls were placed over a VoIP network. It is often important to provide usage restrictions in order to prevent inmates from placing harassing phone calls, conducting forbidden transactions or conversations, calling particular numbers, etcetera. Over the traditional public switched telephone network (PSTN), without VoIP, we restricted these uses by implementing various call control algorithms, for example to detect initiation of three-way calling (and thus losing control over where an inmate's call terminates), to detect dual-tone multi-frequency (DTMF) signaling (as may be used to redirect the termination point when a secondary dial-tone is obtained), or to detect a feature such as remote call forwarding being implemented with respect to a dialed number (again losing control over where an inmate's call terminates).

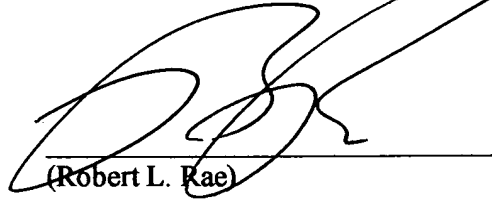
It was believed that the forgoing and other call control functions would be less effective in providing usage restriction due to the nature of VoIP signals being fundamentally different than traditional PSTN signals. For example, detection of three-way calls often relies upon particular signal characteristics, such as an energy spike in a particular frequency range followed by very low energy at all frequencies. However, VoIP signals, through conversion from analog to digital and the use of compression etcetera, appreciably alter or suppress many such signal characteristics. Accordingly, the various usage restrictions were not expected to provide as reliable operation in VoIP as they did in a traditional PSTN network.

It has been discovered, however, that usage restrictions improve unexpectedly when a control computer is coupled to a VoIP network. For example, it has been found that the complete separation of outbound and inbound audio stream packets improves detection of particular events, such as a hook-flash event associated with invoking a three-way calling feature. This separation has heretofore been difficult to achieve in a computer telephony processor due to the natural reflectance that occurs in the conferencing applications used for recording and monitoring phone conversations. It has further been found that VoIP networks can yield more robust signaling information than typically available with respect to PSTN signals, which aid in the detection of features such as remote call forwarding. Moreover, with VoIP one can strip various signaling, such as DTMF signals, thereby preventing DTMF signaling in the first place,

which is another distinct and surprising advantage as compared to merely detecting the signaling after the fact as in a traditional PSTN network configuration.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 2-2-07

  
(Robert L. Rae)